# *Curriculum Vitae*

# Jan P. Stegemann, Department of Biomedical Engineering

## Education

**Ph.D.**, Biomedical Engineering, Georgia Institute of Technology, Atlanta GA, 2002
*Thesis Topic*: "Characterization and Control of Vascular Smooth Muscle Cell Phenotype in Vascular Tissue Engineering", *Advisor*: (b) (6) .

**M.S.**, Chemical Engineering, University of Toronto, Toronto ON, Canada, 1992
The*sis Topic*: "Pre-Scale-Up Analysis of a Submerged Jet Microencapsulation System", *Advisor*: (b)(6) . (b) (6) .

**B.S.**, Chemical Engineering, University of Toronto, Toronto ON, Canada, 1989

## Professional Positions

**Professor,** Department of Biomedical Engineering, University of Michigan, Ann Arbor MI, Sep 2014-present

**Visiting Professor**, Department of Clinical Urology, University Medical Clinics, University of Tübingen, Germany, Jan 2015 – Jul 2015

**Associate Chair for Undergraduate Education**, Department of Biomedical Engineering, University of Michigan, Ann Arbor MI, Jul 2011-2014

**Associate Professor**, Department of Biomedical Engineering, University of Michigan, Ann Arbor MI, Jul 2008-2014

**Assistant Professor**, Department of Biomedical Engineering, Rensselaer Polytechnic Institute, Troy NY, Aug 2002 – Jun 2008

**Adjunct Assistant Professor**, Center for Cardiovascular Sciences, Albany Medical College, Albany NY, Aug 2004 – Jun 2008

**Post-Doctoral Fellow**, Institute for Bioengineering and Biosciences, Georgia Institute of Technology, Atlanta GA, Jan 2002 – Aug 2002

**Research Enginee**r, Research & Development Department, Grace Biomedical (W.R. Grace & Co.), Lexington MA, May 1992 – Jun 1997

**Engineer**, Engineering Research & Development, Lurgi GmbH, Frankfurt, Germany, Jan-Jun 1990

**Researcher**, Dept. Medical Biophysics, Ontario Cancer Institute, Toronto ON, May 1989-Sep 1989

## Honors and Awards

Fellow, American Institute for Medical and Biological Engineering (AIMBE), 2016

Visiting Professor (German Research Foundation), 2015

Outstanding Achievement Award, Dept. Biomedical Engineering, U. of Michigan, 2010

Council of Outstanding Young Engineering Alumni, Georgia Tech, 2007

Rita Schaffer Young Investigator Award, Biomedical Engineering Society, 2005

James D. Watson Investigator Program Award, New York State, 2003

Young Investigator Award, International Soc. for Applied Cardiovascular Biology, 2002

Gordon Research Conference Chairman's Travel Award, 2002
Biomedical Engineering Society Graduate Student Research Award, 2001
Georgia Tech President's Fellowship, 1997-2001
Medtronic Graduate Research Fellowship, 1997-2001
NSERC Postgraduate Scholarship, 1990-92
H.E. Johns Summer Studentship in Medical Physics, 1989
NSERC Undergraduate Student Research Award, 1988
J.P. Bickle Foundation Scholarship, 1986

## Teaching

### Courses taught at University of Michigan

| Course # | Course title | Teaching Role | Term | Enrollment/ Responses | Q1 | Q2 | Q4 |
|---|---|---|---|---|---|---|---|
| BIOMEDE 599.002 | Graduate Innovative Design in BME Pt I | Sole Instructor | Fall 2014 | 31 / 18 | 4.60 | 4.81 | 4.81 |
| BIOMEDE 599.004/5 | Graduate Innovative Design in BME Pt II | Sole Instructor | Winter 2014 | 22 / 16 | 4.61 | 4.70 | 4.88 |
| BIOMEDE 599.002 | Graduate Innovative Design in BME Pt I | Sole Instructor | Fall 2013 | 21 / 13 | 4.91 | 4.78 | 4.91 |
| BIOMEDE 599.004/5 | Graduate Innovative Design in BME Pt II | Sole Instructor | Winter 2013 | 24 / 22 | 4.81 | 4.81 | 4.85 |
| BIOMEDE 599.002 | Graduate Innovative Design in BME Pt I | Sole Instructor | Fall 2012 | 25 / 19 | 4.44 | 4.82 | 4.82 |
| BIOMEDE 499.004 | Introduction to Tissue Engineering | Sole Instructor | Fall 2011 | 17 /13 | 4.69 | 4.85 | 4.91 |
| BIOMEDE 499.004 | Introduction to Tissue Engineering | Sole Instructor | Fall 2010 | 16 / 15 | 4.56 | 4.75 | 4.92 |
| BIOMEDE 599.008 | Cells in their Environment | Sole Instructor | Winter 2010 | 20 / 15 | 4.72 | 4.80 | 4.63 |
| BIOMEDE 499.004 | Introduction to Tissue Engineering | Co-Instructor | Fall 2009 | 12 / 9 | 4.75 | 4.94 | 4.60 |
| BIOMEDE 599.008 | Cells in their Environment | Sole Instructor | Winter 2009 | 19 / 7 | 4.80 | 4.80 | 3.88 |

Q1: Overall, this was an excellent course; Q2: Overall, the instructor was an excellent teacher; Q4: I had a strong desire to take this course. Evaluations are on a 5 point scale where 5 is Strongly Agree and 1 is Strongly Disagree.

### Courses taught at RPI:

| Course # | Title | Role | Term | Enrollment/ Responses | Q1 | Q2 |
|---|---|---|---|---|---|---|
| BMED 4961/6961 | Biology & Engineering of the Extracellular Matrix | Sole Instructor | Spring 2008 | 25 / 15 | 4.9 | 4.9 |
| BMED 4960 | Biomedical Product Design & Development | Sole Instructor | Fall 2007 | 62 / 33 | 4.2 | 4.4 |
| BMED 4240 | Tissue-Biomaterial Interactions | Sole Instructor | Spring 2007 | 85 / 49 | 4.2 | 4.3 |
| BMED 4960 | Biomedical Product Design & Development | Sole Instructor | Fall 2006 | 60 / 33 | 4.2 | 4.3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| BMED 4961/6961 | Biology & Engineering of the Extracellular Matrix | Sole Instructor | Spring 2006 | 37 / 31 | 4.6 | 4.5 |
| BMED 4960 | Biomedical Product Design & Development | Sole Instructor | Fall 2005 | 32 / 29 | 3.6 | 2.6 |
| BMED 4961/6961 | Biology & Engineering of the Extracellular Matrix | Co-Instructor | Spring 2005 | 17 / 16 | 4.5 | 4.2 |
| BMED 4961/6961 | Commercializing Biomedical Technology | Co-Instructor | Fall 2004 | 16 / 16 | 3.5 | 4.0 |
| BMED 4961/6961 | Biology & Engineering of the Extracellular Matrix | Co-Instructor | Spring 2004 | 17 / 16 | 4.6 | 4.5 |
| BMED 4961/6961 | Commercializing Biomedical Technology | Co-Instructor | Fall 2003 | 18 / 17 | 3.5 | 4.3 |
| ENGR 1330 | Introduction to Biomedical Engineering | Sole Instructor | Fall 2003 | 92 / 39 | 3.7 | 4.1 |
| BMED 4600 | Biomedical Engineering Design | Team Adviser | Spring 2003 | 7 / 7 | 4.0 | 4.2 |
| BME D4240 | Tissue-Biomaterial Interactions | Sole Instructor | Spring 2003 | 50 / 39 | 4.1 | 4.2 |
| ENGR 1330 | Introduction to Biomedical Engineering | Sole Instructor | Fall 2002 | 74 / 44 | 3.7 | 3.8 |

Q1: Overall, this was an excellent course; Q2: Overall, the instructor was an excellent teacher; Q4 was not collected. Evaluations are on a 5 point scale where 5 is Strongly Agree and 1 is Strongly Disagree.

## Research

### Past grants and contracts

1] *German Research Foundation (DFG) Guest Visit Grant (HA5696/3-1)*, "A biomaterial- and growth factor-based strategy for controlled MSC delivery and differentiation", $(b) (4), (b) (6), 01/15-03/15, Co-PIs: J. Stegemann and (b) (6) (U. of Tuebingen), Share to JPS: $(b) (4), (b) (6).

2] *Terumo Cardiovascular Inc*. "Graduate Innovative Design in Biomedical Engineering", (b)(4) (b)(6), 09/13-10/14, PI: J. Stegemann, Share to JPS (b) (4) (b)(6).

3] *NSF-CBET/FDA (NSF 1237549)*, "3D Engineered Tissue Models for In Vitro Safety Testing of Nanoparticles", $105,320, 01/12-06/14, PI: J. Stegemann, Share to JPS: $105,320.

4] *UM MCubed Program*, "Self-Assembly of Heart Muscle Derived from Adult Stem Cells", $60,000, 06/12-05/14, Co-PIs: J. Stegemann, J. Jalife (UMMS), T. Herron (UMMS), Share to JPS: $(b) (4), (b) (6).

5] *UM-CRLT Faculty Development Fund*, "Integrating Case Studies into the BME Design Curriculum", $5,850, 05/12-04/14, PI: J. Stegemann, Share to JPS: (b)(4)(b)(6).

6] *AO Foundation (Large Bone Defect Healing Consortium)*, "Delivery of Progenitor Cells in Biomaterial Microenvironments to Promote Large Bone Defect Healing", $(b) (6) (b)(4), 01/12-12/13, PI: J. Stegemann, Co-I: (b) (6) (UMMS), Share to JPS: (b) (4), (b) (6)

7] *NSF-IIP (NSF 1242421)*, "I-Corps: Matrix-Enhanced Delivery of Cell Therapy", $50,000, 06/12-12/13, PI: J. Stegemann, Share to JPS: $50,000.

8] *Terumo Cardiovascular Inc*. "Graduate Innovative Design in Biomedical Engineering", (b)(4)(b)(6) 08/12-09/13, PI: J. Stegemann, Share to JPS: $(b)(4) (b)(6).

9] *NIH-NIBIB (R01 EB005813)*, "Multiscale Mechanics of Bioengineered Tissue", $1,000,295, 08/08-05/12, PI: V. Barocas (U. Minnesota), Co-I: J. Stegemann, Share to JPS: $112,000.

10] (b) (4), (b) (6)

11] *NIH-NIAMS (R01 AR003978)*, "Directed Differentiation of Human Mesenchymal Stem Cells for Bone Repair", $1,326,189, 08/06-09/10, PI: J. Stegemann, Co-I: G. Plopper (RPI), Share to JPS: $1,127,260.

12] (b) (4), (b) (6)
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13] *New York State Spinal Cord Injury Research Board (SCIRB 07-21)*, "Guided Neuronal and Glial Migration in Electrically Conductive Collagen-Carbon Nanotube Scaffolds", $212,570, 04/07-10/09, Co-PIs: J. Stegemann and D. Thompson (RPI), Share to JPS: $106,285.

14] *Center for the Directed Assembly of Nanostructures (NSF NSEC)*, "Health Effects of Nanoparticles Based on their Physico-Chemical Properties", $100,000, 01/07-01/09, Co-PIs: J. Stegemann and L. Montoya (RPI), Share to JPS: $50,000.

15] *National Science Foundation*, "RAMP-UP Departmental Change Initiative: Biomedical Engineering", $10,000, 10/07-09/08, Co-PIs: J. Stegemann, D. Thompson (RPI), N. DePaola (RPI), Share to JPS: all for departmental use.

16] (b) (4), (b) (6)

17] C*leveland Clinic Foundation – Rensselaer Seed Fund*, "Defined Protein Micro-environments for Stem Cell Delivery to the Heart", $(b) (4), (b) (6), 09/06-09/07, Co-PIs: J. Stegemann and (b) (6) (Cleveland Clinic), Share to JPS: $(b) (4), (b) (6).

18] *NIH-NIBIB (R21 EB003978)*, "Composite Scaffolds for Vascular Tissue Engineering", $372,960, 08/04-07/07, PI: J. Stegemann, Share to JPS: $372,960.

19] *NY State Office of Science, Technology and Academic Research*, "Collagen-Carbon Nanotube Composite Biomaterials", $200,000, 10/04-10/06, PI: J. Stegemann, Share to JPS: $200,000.

20] (b) (4), (b) (6)

**Current grants and contracts**

1] *NIH-NIBIB (R25 EB019898)*, "Clinical Immersion and Experiential Learning in Medical Product Innovation", $208,000, 05/15-04/20, Co-PIs: J. Stegemann and R. Schmedlen (BME), Share to JPS: $104,000.

2] *NIH-NIAMS (R01 AR062636)*, "Bone Regeneration Using Osteogenic and Vasculogenic Tissue Modules", $1,844,027, 05/14-04/19, PI: J. Stegemann, Share to JPS: $1,672,661.

3] *NIH-NHLBI (R01 HL118259)*, "Preformed Vascular Modules Designed for Inosculation with Host Tissue", $1,501,105, 09/13-08/17, Co-PIs: J. Stegemann and A. Putnam (BME), Co-I: P. Grossman (UMMS), Share to JPS: $750,553.

4] *NIH-NIAMS (R21 AR064041)*, "Quantitative Ultrasound Imaging for Noninvasive Assessment of Engineered Tissues", $363,482, 9/13-08/16, Co-PIs: J. Stegemann and C. Deng (BME), Share to JPS: $181,741.

5] *NIH-NIAMS (R21 AR062709)*, "Modular Assembly of Interdigitated Osteochondral Interfaces", $342,716, 05/13-04/16, PI: J. Stegemann, Share to JPS: $342,716.

**Pending grants and contracts**

1] (b) (4), (b) (6)

**Publications and scholarly presentations**

**Full articles in refereed publications (59 Total)**

**1]** (b) (4)

(in press), (b) (4)

**2]** Rao RR, Vigen ML, Peterson AW, Caldwell DJ, Putnam AJ, **Stegemann JP**, "Dual-Phase Osteogenic and Vasculogenic Engineered Tissue for Bone Formation", *Tissue Eng Part A*., 21(3-4):530-540, 2015. [PMCID: In process]

**3]** Peterson AW, Caldwell DJ, Rioja AY, Rao RR, Putnam AJ, **Stegemann JP**. Vasculogenesis and Angiogenesis in Modular Collagen-Fibrin Microtissues. *Biomaterials Science*. 2(10):1497-1508, 2014.

**4]** **Stegemann JP**, Verrier S, Gebhard F, Laschke MW, Martin I, Simpson H, Miclau T, "Cell therapy for bone repair: narrowing the gap between vision and practice", *Eur Cell Mater*., 27:1-4, 2014.

**5]** Galie PA, **Stegemann JP**, "Injection of mesenchymal stromal cells into a mechanically stimulated in vitro model of cardiac fibrosis has paracrine effects on resident fibroblasts", *Cytotherapy*, 16(7):906-914, 2014.

**6]** Rao RR, Ceccarelli J, Vigen ML, Gudur M, Singh R, Deng CX, Putnam AJ, **Stegemann JP**, "Effects of hydroxyapatite on endothelial network formation in collagen/fibrin composite hydrogels in vitro and in vivo.", *Acta Biomater*., 10(7):3091-7, 2014.

**7]** Gudur MS, Rao RR, Peterson AW, Caldwell DJ, **Stegemann JP#**, Deng CX#, "Noninvasive quantification of in vitro osteoblastic differentiation in 3D engineered tissue constructs using spectral ultrasound imaging.", *PLoS One*, 9(1):e85749, 2014. # = authors contributed equally

**8]** Vaughan BL, Galie PA, **Stegemann JP**, Grotberg JB, "A poroelastic model describing nutrient transport and cell stresses within a cyclically strained collagen hydrogel", *Biophysical Journal*, 105(9):2188-2198, 2013.

**9]** Walters BD, **Stegemann JP**, "Strategies for Directing the Structure and Function of 3D Collagen Biomaterials across Length Scales (Invited Review)", *Acta Biomaterialia*, 10(4):1488-1501, 2013.

**10]** Rao RR, **Stegemann JP**, "Cell-Based Approaches to the Engineering of Vascularized Bone Tissue", *Cytotherapy*, 15:1309-1322, 2013.

**11]** Wise JK, Alford AI, Goldstein SA, **Stegemann JP**, "Comparison of Uncultured Marrow Mononuclear Cells and Culture-Expanded Mesenchymal Stem Cells in 3D Collagen-Chitosan Microbeads for Orthopaedic Tissue Engineering", *Tissue Engineering Pt A*, 20(1-2):210-224, 2013.

**12]** Roberts M, Bhatt N, Voge CM, Meshot ER, **Stegemann JP**, Hart JA, "Self-assembly of collagen

canopies on micropost arrays and their viability for constraint-free cell culture", *J. Materials Chemistry B*, 1:4711-4718, 2013.

**13]** Wang L, Rao RR, **Stegemann JP**, "Delivery of mesenchymal stem cells in chitosan/collagen microbeads for orthopedic tissue repair", *Cells Tissues Organs*, 197(5):333-43, 2013.

**14]** Rao RR, Peterson AW*, **Stegemann JP**, "Osteogenic differentiation of adipose-derived and marrow-derived mesenchymal stem cells in modular protein/ceramic microbeads", *J. Biomedical Materials Research A*, 101(6):1531-8, 2013.
[*Award: 2013 Outstanding Research in the Ph.D. Category, Society for Biomaterials]*

**15]** Galie PA, Khalid N*, Carnahan KE, Westfall MV, **Stegemann JP**, "Substrate stiffness affects sarcomere and costamere structure and electrophysiological function of isolated adult cardiomyocytes", *Cardiovascular Pathology*, 22(3):219-27, 2013.

**16]** Caldwell DJ, Rao RR, **Stegemann JP**, "Assembly of discrete collagen-chitosan microenvironments into multiphase tissue constructs", *Advanced Healthcare Materials*, 2(5):673-7, 2013.

**17]** Saito E, Suarez-Gonzalez D, Rao RR, **Stegemann JP**, Murphy WL, Hollister SJ., "Use of Micro-Computed Tomography to Nondestructively Characterize Biomineral Coatings on Solid Freeform Fabricated Poly (L-Lactic Acid) and Poly (ε-Caprolactone) Scaffolds In Vitro and In Vivo", *Tissue Engineering Part C*, 19(7):507-17, 2013.

**18]** Voge CM, Johns J*, Raghavan M, Morris MD, **Stegemann JP**, "Wrapping and dispersion of multiwalled carbon nanotubes improves electrical conductivity of protein-nanotube composite biomaterials", *J. Biomedical Materials Research A*, 101(1):231-8, 2013.

**19]** Gudur M#, Rao RR#, Hsiao YS, Peterson AW*, Deng CX#, **Stegemann JP#**, "Noninvasive, Quantitative, Spatiotemporal Characterization of Mineralization in Three-Dimensional Collagen Hydrogels Using High-Resolution Spectral Ultrasound Imaging," *Tissue Engineering Part C*, 18(12):935-46, 2012. # = authors contributed equally

**20]** Rao RR, Peterson AW*, Ceccarelli J, Putnam AJ, **Stegemann JP**, "Matrix composition regulates three-dimensional network formation by endothelial cells and mesenchymal stem cells in collagen/fibrin materials", *Angiogenesis*, 15(2):253-64, 2012.

**21]** Rao RR, Jiao A*, Kohn DH, **Stegemann JP**. "Exogenous mineralization of cell-seeded and unseeded collagen-chitosan hydrogels using modified culture medium", *Acta Biomaterialia*, 8(4):1560-5, 2012.

**22]** Galie PA, Russell MW, Westfall MV, **Stegemann JP**, "Interstitial fluid flow and cyclic strain differentially regulate cardiac fibroblast activation via AT1R and TGF-β1", *Experimental Cell Research*, 318(1):75-84, 2012. [PMCID: PMC3221916]

**23]** Galie PA, Spilker RL, **Stegemann JP**, "A Linear, Biphasic Model Incorporating a Brinkman Term to Describe the Mechanics of Cell-Seeded Collagen Hydrogels", *Ann Biomed Eng*., 39(11):2767-2779, 2011. [PMCID: In process]

**24]** Chen Z*, Wang L, **Stegemann JP**, "Phase-Separated Chitosan-Fibrin Microbeads for Cell Delivery", *J. Microencapsulation*, 28(5):344-352, 2011. [PMCID: In process]

**25]** Voge CM, **Stegemann JP**, "Carbon nanotubes in neural interfacing applications", *J Neural Eng.*, 8(1):011001, 2011. [PMID: 21245526].
*[selected as "Highlights of 2011" paper by J. Neural Engineering]*

**26]** Wang L, **Stegemann JP**, "Glyoxal Crosslinking of Cell-Seeded Collagen/Chitosan Hydrogels for Bone Regeneration", *Acta Biomaterialia*, 7(6):2410-2417, 2011. [PMCID: PMC3085611]

**27]** Galie P, Westfall MV, **Stegemann JP**, "Reduced Serum Content and Increased Matrix Stiffness Promote the Cardiac Myofibroblast Transition in 3D Collagen Matrices," *Cardiovascular Pathology*, 20(6):325-333, 2011. [PMCID: PMC3110608]

**28]** Galie P, **Stegemann JP**, "Simultaneous Application of Interstitial Flow and Cyclic Mechanical Strain to a 3D Cell-Seeded Hydrogel," *Tissue Eng Part C Methods*, 17(5):527-536, 2011. [PMCID: In process]

**29]** Wang L, **Stegemann JP**, "Thermogelling chitosan and collagen composite hydrogels initiated with beta-glycerophosphate for bone tissue engineering", *Biomaterials*, 31(14):3976-3985, 2010. [PMCID: PMC2851195]

**30]** Solorio L, Zwolinski C, Lund AW, Farrell MJ, **Stegemann JP**, "Gelatin Microspheres Crosslinked with Genipin for Local Delivery of Growth Factors", *J. Tissue Engineering and Regenerative Medicine*, 4(7):514-523, 2010. [PMCID: PMC2974568]

**31]** Wang L, **Stegemann JP**, "Extraction of high quality RNA from polysaccharide matrices using cetyltrimethylammonium bromide", *Biomaterials*, 31(7):1612-1618, 2010. [PMCID: PMC2813910]

**32]** DeWitt D, Kaszuba SN, Thompson DM, **Stegemann JP**, "Collagen I-Matrigel Scaffolds for Enhanced Schwann Cell Survival and Control of 3D Cell Morphology", *Tissue Engineering Part A*, 15(10):2785-2793, 2009. [PMID: 19231925]

**33]** Lund AW, Bilgin CC, Al Hasan M, McKeen LM, **Stegemann JP**, Yener B, Zaki M, Plopper, GE, "Quantification of Spatial Parameters in 3D Cellular Constructs Using Graph Theory", *J. Biomedicine and Biotechnology*, 2009:928286, 2009. [PMCID: PMC2775910]

**34]** Lund AW, **Stegemann JP**, Plopper GE, "Mesenchymal Stem Cells Sense Three Dimensional Type I Collagen through Discoidin Domain Receptor 1", *The Open Stem Cell Journal*. 1(1):40-53, 2009.

**35]** Rowe SL, **Stegemann JP**, "Microstructure and Mechanics of Collagen-Fibrin Matrices Polymerized using Ancrod Snake Venom Enzyme", *J. Biomechanical Engineering*, 131(6):061012, 2009. [PMCID: PMC2737722]

**36]** Lund AW, Yener B, **Stegemann JP**, Plopper GE, "The Natural and Engineered 3D Microenvironment as a Regulatory Cue during Stem Cell Fate Determination", *Tissue Eng Part B Rev*., 15(3):371-80, 2009. [PMCID: PMC2738762]

**37]** Lund AW, **Stegemann JP**, Plopper GE, "Inhibition of ERK Promotes Collagen Gel Compaction and Fibrillogenesis to Amplify the Osteogenesis of Human Mesenchymal Stem Cells in Three-Dimensional Collagen I Culture", *Stem Cells Dev*. 18(2):331-41, 2009. [PMCID: PMC2656582]

**38]** Voge CM, Kariolis M*, MacDonald RA, **Stegemann JP**, "Directional Conductivity in SWNT-Collagen-Fibrin Composite Biomaterials through Strain-Induced Matrix Alignment", *Journal of Biomedical Materials Research A*, 86(1):269-77, 2008. [PMID: 18428799]

**39]** Hong H and **Stegemann JP**, "2D and 3D Collagen and Fibrin Biopolymers Promote Specific ECM and Integrin Gene Expression by Vascular Smooth Muscle Cells", *Journal of Biomaterials Science: Polymer Edition*, 19(10): 1279-1293, 2008. [PMCID: PMC2731795]

**40]** MacDonald RA, Voge C, Kariolis M*, **Stegemann JP**, "Carbon Nanotubes Increase the Electrical Conductivity of Fibroblast-Seeded Collagen Hydrogels", *Acta Biomaterialia*, 4(6):1583-1592, 2008. [PMID: 18706876]

**41]** Lund AW, Bush J, Plopper GE, **Stegemann JP**, "Osteogenic Differentiation of Mesenchymal Stem Cells in Defined Protein Beads", *Journal of Biomedical Materials Research B*, 87(1):213-221, 2008. [PMCID: PMC2574764]

**42] Stegemann JP**, Kaszuba SN, Rowe SL, "Advances in Vascular Tissue Engineering Using Protein-Based Biomaterials (Invited Review)", *Tissue Engineering*, 13(11): 2601-2613, 2007. [PMCID: PMC2257983]

**43]** Hong H, McCullough CM* and **Stegemann JP**, "The role of ERK signaling in protein hydrogel remodeling by vascular smooth muscle cells", *Biomaterials*, 28(26):3824-3833, 2007. [PMCID: PMC2001258]

**44]** Rowe SL , Lee S and **Stegemann JP**, "Influence of Thrombin Concentration on the Mechanical and Morphological Properties of Cell-Seeded Fibrin Hydrogels", *Acta Biomaterialia*, 3(1):59-67, 2007. [PMCID: PMC1795649]

**45]** Rowe SL and **Stegemann JP**, "Interpenetrating Collagen-Fibrin Composite Matrices with Varying Protein Contents and Ratios", *Biomacromolecules*, 7(11):2942-8, 2006. [PMCID: PMC1795649]

**46]** Batorsky A*, Liao J*, Lund AW, Plopper GE, **Stegemann JP**, "Encapsulation of Adult Human Mesenchymal Stem Cells within Collagen-Agarose Microenvironments", *Biotechnology and Bioengineering*, 92(4):492-500, 2005. [PMID: 16080186]

**47]** MacDonald RA, Laurenzi BF*, Viswanathan G, Ajayan PM, **Stegemann JP**, "Collagen-Carbon Nanotube Composite Materials as Scaffolds in Tissue Engineering", *Journal of Biomedical Materials Research A*, 74(3), pp. 489-496, 2005. [PMID: 15973695]

**48] Stegemann JP**, Hong H, Nerem RM, "Mechanical, Biochemical and Extracellular Matrix Effects on Vascular Smooth Muscle Cells" (Review), *Journal of Applied Physiology*, 98(6), pp. 2321-2327, 2005. [PMID: 15894540]

**49]** Ebong IM*, McCloskey KE, **Stegemann JP**, Nerem RM, "Analysis of Myogenic Proteins in the Development of a Myocardial Patch Using Type I Collagen", *Journal of Undergraduate Research in Bioengineering*, 4(1), pp. 25-30, 2004.

**50]** Cummings CL*, Gawlitta D*, Nerem RM, **Stegemann JP**, "Properties of Engineered Vascular Constructs made from Collagen, Fibrin and Collagen-Fibrin Mixtures", *Biomaterials*, 25(17), pp. 3699-3706, 2004. [PMID: 15020145]

**51] Stegemann JP**, Dey NB, Lincoln TM, Nerem RM, "Genetic Modification of Vascular Smooth Muscle Cells to Control Phenotype and Function in Vascular Tissue Engineering", *Tissue Engineering*, 10(1), pp. 189-199, 2004. [PMID: 15009945]

**52] Stegemann JP**, Nerem RM, "Phenotype Modulation in Vascular Tissue Engineering Using Biochemical and Mechanical Stimulation", *Annals of Biomedical Engineering*, 31, pp. 391-402, 2003. [PMID: 12723680]

**53] Stegemann JP**, Nerem RM, "Altered Response of Vascular Smooth Muscle Cells to Exogenous Biochemical Stimulation in Two- and Three-Dimensional Culture", *Experimental Cell Research*, 283, pp. 146-155, 2003. [PMID: 12581735]

**54]** O'Neil JJ, **Stegemann JP**, Nicholson DT, Gagnon KA, Solomon BA, Mullon CJP, "The Isolation and Function of Porcine Islets from Market Weight Pigs", *Cell Transplantation*, 10, pp. 235-246, 2001. [PMID: 11437069]

**55] Stegemann JP**, Raina S, Nicholson DT, Jimenez P, Shah L, Cain S, Chandler B, Pitkin Z, Mullon C, Custer L, "Comparison of Analytical Methods for Quantitation of Isolated Porcine Hepatocyte Yields", *Tissue Engineering*, 6(3), pp. 253-264, 2000. [PMID: 10941220]

**56] Stegemann JP**, O'Neil JJ, Nicholson DT, Mullon CJP, "Improved Assessment of Isolated Islet Tissue Volume Using Digital Image Analysis", *Cell Transplantation*, 7(5), pp. 469-478, 1998.

[PMID: 9786067]

**57] Stegemann JP**, O'Neil JJ, Nicholson DT, Mullon CJP, Solomon BA, "Automated Counting and Sizing of Isolated Porcine Islets Using Digital Image Analysis", *Transplantation Proceedings*, 29, pp. 2272-2273, 1997. [PMID: 9193623]

**58]** O'Neil JJ, **Stegemann JP**, Nicholson DT, Mullon CJP, Maki T, Monaco A, Solomon BA, "Immunoprotection Provided by the Bioartificial Pancreas in a Xenogeneic Host", *Transplantation Proceedings*, 29, pp. 2116-2117, 1997. [PMID: 9193550]

**59] Stegemann JP**, Sefton MV, "Video Analysis of Submerged Jet Microencapsulation Using HEMA-MMA", *Canadian Journal of Chemical Engineering*, 74, pp. 518-525, 1996.

**Shorter communications, letters or notes or briefs in refereed publications**

**1]** Lund AW, Lunsford EP*, Lin G, Roysam B, **Stegemann JP**, Plopper GE, "Encapsulation of Human Mesenchymal Stem Cells in a 3D Extracellular Matrix Environment for the Direction of Osteogenesis", *ASCB Molecular Biology of the Cell*, 16 (Supplement), 2005.

**2]** Lund AW, Lin G, Roysam B, **Stegemann JP**, Plopper GE, "Image-Based Quantitation of Cellular Response to Encapsulation in ECM Beads" *ASCB Molecular Biology of the Cell*, 15 (Supplement), 2004.

**3] Stegemann JP**, Dey NB, Lincoln TM, Nerem RM, "Genetic Modification of Vascular Smooth Muscle Cells to Control Phenotype and Function", *Cardiovascular Pathology* 11, p. 12, 2002.

**4] Stegemann JP**, Nerem RM, "Combined Biochemical and Mechanical Stimulation of Tissue Engineered Blood Vessels", *Annals of Biomedical Engineering* 29, p. S145, 2001.

**5] Stegemann JP**, Dey NB, Lincoln TM, Nerem RM, "Use of Smooth Muscle Cells with a Genetically Modified Phenotype in a Collagen-Based Vascular Construct", *Tissue Engineering* 6, p. 658, 2000.

**6]** Schueneman AJ*, **Stegemann JP**, Nerem RM, "The Effect of Extracellular Matrix and Passage on the Vasoactive Response of Cultured Vascular Smooth Muscle Cells", *Tissue Engineering* 6, p. 695, 2000.

**7]** O'Neil JJ, **Stegemann JP**, Nicholson DT, Mullon CJP, Maki T, Monaco A, Solomon BA, "Porcine Islet Xenotransplantation : A Treatment For Diabetes", *ASAIO Journal* 43:2, p.19, 1997.

**8] Stegemann JP**, O'Neil JJ, Nicholson DT, Mullon CJP, Solomon BA, "Automated Counting and Sizing of Isolated Porcine Islets Using Digital Image Analysis", *Cell Transplantation* 5(5S-2), p. 4, 1996.

**9]** O'Neil JJ, **Stegemann JP**, Nicholson D, Mullon C, Maki T, Porter J, Monaco AP, Solomon BA, "Long-term Function of Marketweight Porcine Islets in Immunocompromised Diabetic Mice", *Diabetes* 44(S1), p. 265A, 1995.

**Refereed conference summaries or abstracts**

>100 Conference presentations (not listed for brevity)

**Chapters in books**

**1]** Galie PA and Stegemann, "Mechanical Control of Adult Mesenchymal Stem Cells in Cardiac Applications", Chapter 3 in: Regenerative Pharmacology, ed. Christ G and Anderson K-E, Cambridge University Press, Cambridge, UK, 2012.

**2]** McClelland R, Dennis R, Reid LM, Stegemann JP, Palsson B, Macdonald JM, "Tissue Engineering", Chapter 12 in: Introduction to Biomedical Engineering (3rd edition), ed. Enderle J, Blanchard S, Bronzino J, Academic Press, Boston MA, 2012.

**3]** Galie PA and Stegemann JP, "Mechanobiology of Cardiac Fibroblasts", In: Mechanobiology Handbook (CRC Press), ed. Nagatomi J, Taylor & Francis, Boca Raton, FL, 2011.

**4]** Stegemann JP, Rowe SL, Nerem RM, "Engineered Blood Vessel Substitutes", In: Scaffolding in Tissue Engineering, ed. Elisseeff J and Ma PX, Marcel Dekker, New York, 2005.

**5]** Nerem RM, Stegemann JP, "Functional Requirements for the Engineering of a Blood Vessel Substitute" In: Functional Tissue Engineering, ed. Guilak F, Butler D, Mooney D, and Goldstein S, Springer-Verlag, New York, 2003.

**Government, university, or industrial reports (non-refereed)**

1] "Biomaterials in Biomedical Design Classes: Balancing the Established with the New", Biomaterials Forum, 35(2), 2013.

2] "IP in the Classroom: Stimulating or Stifling", Biomaterials Forum, 34(4), 2012.

3] "Biomaterials Professors: Added Value or Outdated Relics?", Biomaterials Forum, 34(2), 2012.

4] "Case Studies as a Mechanism to Teach Biomaterials Science", Biomaterials Forum, 33(1), 2011.

5] "Education-focused sessions at the SFB Annual Meeting: the Society's chance to help shape biomaterials education", Biomaterials Forum, 32(2), 2010.

6] "Introduction to the Forum's Education Column", Biomaterials Forum, 32(1), 2010.

**Invited presentations**

**1]** Workshop on Cellular Therapies, University of Tübingen, Germany, "Biomaterial-mediated Cell Delivery", 3/17/15, Host: (b) (6) .

**2]** Faculty of Dentistry, McGill University, Montreal, Canada, "Cell-Based Therapy using Modular Microenvironments for Bone Regeneration", 10/17/14, Host: (b) (6)

**3]** AO Foundation Exploratory Research Symposium, Davos, Switzerland, "Delivery of Progenitor Cells in Modular Microenvironments for Bone Regeneration", 9/7/13, Host: (b) (6)

**4]** Center for Regenerative Medicine, University of Tuebingen, Tuebingen Germany, "Microenvironments for the Control of Cell Function", 11/8/12, Host: (b) (6) .

**5]** Biomedical Engineering Society student chapter meeting, University of Michigan, Ann Arbor MI, "Biomedical Engineering: State of the Field 2012", 9/18/12, Host: (b) (6) .

**6]** 77th Annual Research Day, Providence Hospital and Medical Centers, Southfield MI, "Stem Cell-based Therapies for Regenerative Medicine", 4/18/12, Host: (b) (6) .

**7]** Michigan Research Community seminar series, School of Public Health, University of Michigan, Ann Arbor MI, "Bioengineering and Regenerative Medicine", 2/8/12, Host: (b) (6) .

**8]** 2nd Caspar Seminar, Institute for Molecular Biophysics, Florida State University, Tallahassee FL, "Cell-based Therapies for Bone Regeneration", 11/29/11, Host: (b) (6) .

**9]** Biomedical Engineering Society student chapter meeting, University of Michigan, Ann Arbor MI,

"Biomedical Engineering: State of the Field 2011", 11/9/11, Host: (b) (6) .

**10]** Cleveland Neural Engineering Workshop, Case Western Reserve University, Cleveland OH, "Carbon Nanotubes in Neural Interfacing Applications", 6/16/11, Host: (b) (6) .

**11]** Acta Biomaterialia Gold Medal Session (in honor of Michael Sefton), Society for Biomaterials Annual Meeting, Orlando FL, "Materials for Microenvironments", 4/15/11, Host: (b) (6) .

**12]** Institute of Bioengineering and Nanotechnology (IBN), Singapore Agency for Science, Technology, and Research (A*STAR), Singapore, "Modular Microenvironments for Stem Cell Delivery and Differentiation", 3/2/11, Host: (b) (6) .

**13]** Department of Biomedical Engineering, University of South Florida, Tampa FL, "Matrix-Enhanced Delivery of Stem Cells for Regenerative Medicine", 2/11/11, Host: (b) (6) .

**14]** Nanobiology Seminar Series, University of Michigan, Ann Arbor MI, "Protein-Nanotube Composite Biomaterials", 11/30/10, Host: (b) (6) .

**15]** Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto ON, "Microcapsules and Microenvironments", 10/16/09, Host: (b) (6) .

**16]** College of Engineering, University of Michigan, Ann Arbor MI, "Engineered Microenvironments for Regenerative Medicine", 6/12/09, Host: Alumni Association.

**17]** Cardiovascular Center, University of Michigan, Ann Arbor MI, "Engineered Microenvironments for Cardiovascular Research and Therapy", 5/4/09, Host: (b) (6) .

**18]** Department of Biomedical Engineering, Ohio State University, Columbus OH, "Protein Microenvironments for Cell Differentiation and Delivery", 04/08/09, Host: (b) (6)

**19]** Department of Biomedical Engineering, University of Western Ontario, London ON, "Cell-Seeded Hydrogel Microenvironments for Bone Repair", 02/10/09, Host: (b) (6) .

**20]** Georgia Tech/Emory Center for the Engineering of Living Tissues, Atlanta, GA, "Cardiovascular Thrust – Alumni Research Presentation", 1/13/09, Host: (b) (6) .

**21]** Center for Arrhythmia Research, University of Michigan, Ann Arbor MI, "Engineered Tissue Analogs for Cardiovascular Research", 11/18/08, Host: (b) (6) .

**22]** Syracuse Biomaterials Institute, Syracuse University, Syracuse NY, "Protein-Based Composite Materials for Regenerative Medicine", 10/17/08, Host: (b) (6) .

**23]** Department of Biomedical Engineering, University of Michigan, Ann Arbor MI, "Protein Hydrogel Microenvironments for Directed Stem Cell Differentiation", 9/3/08, Host: (b) (6) .

**24]** Northeast Bioengineering Conference 2008, Brown University, Providence RI, invited panelist on Industry-Academia Professional Panel, 4/5/08, Host: (b) (6) .

**25]** Department of Biomedical Engineering, University of Minnesota, Minneapolis MN, "Biomaterials and Decision Support for Tissue Engineering", 2/11/08, Host: (b) (6) .

**26]** Biomedical Engineering Society (RPI Student Chapter), Troy NY, "Biomedical Engineers: Who are We?", 10/24/07, Host: (b) (6)

**27]** NanoBiotech 2007, Troy NY, "Carbon Nanotubes in Protein Matrices: 3D Models for Toxicity Studies", 9/17/07, Host: (b) (6) .

**28]** Albany Medical College, Albany NY, "Applying Bioengineering Knowledge to Clinical Problems", part of Workshop on Math-Biology Interactions, 7/16/07, Host: (b) (6) .

**29]** American Society for Pharmacology and Experimental Therapeutics (ASPET) Symposium on

Regenerative Pharmacology at Experimental Biology 2007, Washington DC, “Phenotype Modulation in Three-Dimensional Engineered Tissues”, 5/1/07, Host: (b) (6) .

**30]** EC Framework Consortium on Carbon Nanotubes for Application in Electronics, Catalysis, Composites and Nanobiology (CANAPE), Workshop on Carbon Nanotubes for Biomedical Applications, Rome Italy, “Protein-CNT Composites: Scaffolds for Engineered Cardiovascular Tissues”, 4/3/07, Host: (b) (6) .

**31]** Department of Biomedical Engineering, Tufts University, Boston MA, “Composite Matrices for Tissue Engineering”, 3/26/07, Host: (b) (6) .

**32]** Department of Biomedical Engineering, University of Michigan, Ann Arbor MI, “Protein Composite Matrices for Regenerative Medicine”, 3/21/07, Host: (b) (6) .

**33]** Department of Biomedical Engineering, University of Wisconsin-Madison, Madison WI, “Composite Biomaterials for Stem Cell Bioengineering”, 2/19/07, Host: (b) (6) .

**34]** Biosciences Division, General Electric Global Research Center, Niskayuna NY, “Control of Cell Function in Protein Composite Matrices”, 2/7/07, Host: (b) (6) .

**35]** Nanotechnology 2006: Innovation, Opportunity, Commercialization, Troy NY, “Collagen-Carbon Nanotube Composite Biomaterials”, 9/25/06, Host: (b) (6)

**36]** Center for Cardiovascular Sciences, Albany Medical College, Albany NY, "Applying Bioengineering Knowledge to Clinical Problems", part of Workshop on Math-Biology Interactions, 7/10/06, Host: (b) (6) .

**37]** Center for Medical Science, Ordway Research Institute, Albany NY, "Applying Cell-Matrix Interactions in Cardiovascular Tissue Engineering", 3/2/06, Host: (b) (6) .

**38]** Bone Metabolic Lunch Guest Speaker, Hospital for Special Surgery, New York NY, “Defined Cellular Microenvironments for Bone Repair”, 10/10/05, Host: (b) (6) .

**39]** Plenary Lecture, Rita Schaffer Young Investigator Award, Biomedical Engineering Society Annual Meeting, Baltimore MD, “Cell-Matrix Interactions and their Application in Biomedical Engineering”, 9/30/05, Host: (b) (6) .

**40]** Program in Bioengineering, Union College, Schenectady NY, “Tissue Engineering: Understanding and Applying Cell-Matrix Interactions”, 4/14/05, Host: (b) (6) .

**41]** New York State Office of Science, Technology and Academic Research (NYSTAR), JD Watson Award Ceremonies, Rensselaer NY, “Directed Assembly of Biomaterials”, 10/15/04, Host: (b) (6)

**42]** Materials Systems Technologies Division, General Electric Global Research Center, Niskayuna NY, “Cell-Matrix Interactions and their Application in Biomaterials and Tissue Engineering”, 7/30/04, Host: (b) (6) .

**43]** Department of Chemical Engineering, Queen’s University, Kingston ON, Canada, “Matrix-Dependent Signaling and Cell Function in Vascular Tissue Engineering”, 3/24/04, Host: (b) (6) .

**44]** Tri-Beta Biological Honor Society, RPI, Troy NY, “Biologists, Engineers, and Bioengineering”, 12/04/03, Host: (b) (6)

**45]** Department of Biology, Clarkson University, Potsdam NY, “Cell and Matrix Function in Engineered Vascular Tissues”, 10/03/03, Host: (b) (6) .

**46]** Institute for Bioengineering and Bioscience, Georgia Institute of Technology, Atlanta GA, “A Tribute to Bob Nerem”, 4/28/03. Host: (b) (6) .

**47]** Biology Department, RPI, Troy NY, "Phenotype Control in Vascular Tissue Engineering", 01/27/03, Host: (b) (6) .

**48]** Center for Cell Biology and Cancer Research, Albany Medical College, Albany NY, "Smooth Muscle Cell Phenotype and the Design of Vascular Tissues", 01/14/03, Host: (b) (6)

**49]** Wadsworth Center for Laboratories and Research, New York State Department of Health, Albany NY, "Control of Cell Function in Engineered Vascular Tissues", 10/29/02, Host: (b) (6) .

**50]** Biomedical Engineering Department, Rensselaer Polytechnic Institute, Troy NY, "Strategies to Control Cell Function in Vascular Tissue Engineering", 9/18/02, Host: (b) (6) .

**51]** Department of Chemical and Biochemical Engineering, University of Western Ontario, London ON, "Fully Biological Vascular Grafts", 6/2/02, Host: (b) (6) .

**52]** School of Biomedical Engineering, Dalhousie University, Halifax NS, "Phenotype Control using Biochemical and Mechanical Stimulation", 5/20/02, Host: (b) (6)

**53]** Biomedical Engineering Department, Purdue University, West Lafayette IN, "Cell Control Strategies in Vascular Tissue Engineering", 4/6/02, Host: (b) (6) .

**54]** Department of Biomedical Engineering, Rensselaer Polytechnic Institute, Troy NY, "Smooth Muscle Cell Phenotype in Vascular Tissue Engineering", 4/2/02, Host: (b) (6) .

**55]** Center for Biomedical Engineering, University of California Irvine, Irvine CA, "Vascular Tissue Engineering", 3/28/02, Host: (b) (6)

**56]** Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto CA, "Characterization and Control of Vascular Smooth Muscle Cell Phenotype in Vascular Tissue Engineering", 3/5/02, Host: (b) (6) .

**57]** Department of Biomedical Engineering, University of Virginia, Charlottesville VA, "Controlling Smooth Muscle Cell Phenotype In Vitro", 2/14/02, Host: (b) (6) .

**58]** Tissue Engineering: Challenges and Opportunities Short Course, University of Limerick, Limerick, Ireland, "Liver Assist Systems", 2/1/02, Host: (b) (6) .

**59]** Biotechnology Laboratory, University of British Columbia, Vancouver BC, "Characterization and Control of Vascular Smooth Muscle Cell Phenotype in Vascular Tissue Engineering", 1/28/01, Host: (b) (6) .

**US and international patents awarded (inventors, title, number, date issued)**

**1]** Stegemann JP, O'Neil JJ, Mullon C, "Artificial Pancreas", U.S. patent 6,399,341, June 4, 2002.

**2]** Stegemann JP, O'Neil JJ, Mullon C, "Artificial Pancreas", U.S. patent 6,023,009, Feb 8, 2000.

**Paid Consulting**

1] Consulting on (b) (4) , University of Michigan – Dearborn, Department of Mechanical Engineering, April 3, 2012.

2] Consulting on biomanufacturing excipients, ingredients, and applications (by phone), (b) (4) .

3] Member of Due Diligence team for acquisition of (b) (4) .

4] Consulting on stem cell-based therapies for treatment (b) (4)

(b) (4)

5] Consulting (b) (4) litigation:
(b) (4)

## Service

**Major committee assignments in the Department, College, and/or University**

***At the University of Michigan:***

| | | |
|---|---|---|
| 1] | Sep 2014-present | Industrial Relations Committee (BME), Member |
| 2] | Sep 2011-present | Associate Chair for Undergraduate Education (BME) |
| 3] | Sep 2011-present | BME Department Executive Committee (BME) |
| 4] | Sep 2011-present | BME Undergraduate Education Committee (BME), Chair |
| 5] | Apr 2010-present | Center for Organogenesis Project Committee (UMMS), Member |
| 6] | Jan 2010-present | Center for Organogenesis Steering Committee (UMMS), Member |
| 7] | Sep 2009-present | Faculty Committee on Discipline (CoE), Member |
| 8] | Aug 2012-May 2013 | BME Faculty Search Committee (BME), Member |
| 9] | Sep 2009-Nov 2011 | Self-Study Committee (BME), Member |
| 10] | Sep 2008-Aug 2011 | BME Undergraduate Education Committee (BME), Member |
| 11] | Sep 2010-Apr 2011 | BME Cluster Hire Search Committee (BME), Member |
| 12] | May 2009-Sept 2009 | BME Student-Faculty Retreat Planning Committee (BME), Member |
| 13] | Sep 2008-Jun 2009 | BME Faculty Search Committee (BME), Member |
| 14] | May 2008-Jun 2009 | BME Strategic Planning Committee (BME), Member |

***At Rensselaer Polytechnic Institute:***

| | | |
|---|---|---|
| 15] | Sep 2007-May 2008 | School of Engineering Curriculum Committee (SoE), Member |
| 16] | Sep 2007-May 2008 | Undergraduate Curriculum Committee (BME), Member |
| 17] | Sep 2005-Dec 2005 | CBIS Imaging Core Director Search Committee (CBIS), Member |
| 18] | Jan 2005-Dec 2007 | SoE Graduate Recruitment Committee (SoE), Member |
| 19] | Sep 2004-Aug 2007 | Graduate Program Committee (BME), Member |
| 20] | Jan 2005-May 2005 | Process Re-Engineering in Procurement Task Force (Institute), Member |
| 21] | Sep 2004-Aug 2005 | Junior Faculty Search (BME), Chair |
| 22] | Sep 2004-Aug 2005 | Chairperson Search Committee (BME), Member |
| 23] | Sep 2002-Aug 2004 | Undergraduate Curriculum Committee (BME), Member |

**Service to government or professional organizations, and service on review board/study panels**

***Professional Service:***

1] Elected to the Council of the Tissue Engineering and Regenerative Medicine International Society – Americas chapter (TERMIS-AM), 2015-2018.

2] Elected Member-at Large (elected by national membership, this position represents the membership and is the ombudsman for member issues), Society for Biomaterials, 2013-2014. In this role, I am also an appointed member of the following governing bodies of the Society:

Board of Directors
Council
Long Range Planning Committee
Program Committee

3] Meetings Committee (chooses location of annual meetings and assists organization of regional conferences), Society for Biomaterials, 2012-2013.

4] Co-Chair (with Mariah Hahn, RPI) and Organizer of "Biomaterials Strategies to Promote Vascularization" session, Society for Biomaterials Fall Meeting, New Orleans LA, Oct 4-6, 2012.

5] Conference Co-Chair (with David Kohn, U. Michigan) of Upper Midwest Biomaterials Day conference sponsored by Society for Biomaterials, May 12-13, 2011.

6] Awards, Ceremonies, and Nominations Committee Member (Elected position), Society for Biomaterials, 2011-2012. Election at SFB Annual Business Meeting.

7] Co-Chair (with Jason Burdick, U. Pennsylvania) and Organizer of "Cagematch 2011: Natural versus Synthetic Biomaterials in Tissue Engineering" session, Society for Biomaterials 2011 Annual Meeting, Orlando FL, Apr 13-16, 2011.

8] Federal Advisory Committee Act (FACA) appointee to Rehabilitation Research and Development Scientific Merit Review Board, Veteran's Administration, May 2010-April 2014.

9] Education Editor, Biomaterials Forum, published quarterly by the Society for Biomaterials, 2010-2013.

10] Co-Chair (with Todd McDevitt, Georgia Tech) and Organizer of "Biomaterials for Directed Stem Cell Differentiation" session, Society for Biomaterials 2010 Annual Meeting, Apr 21-24, 2010.

11] Co-Chair (with Yusuf Khan, Liisa Kuhn, U. Connecticut) and Organizer of "Multifactor Drug Delivery for Musculoskeletal Applications" session, Society for Biomaterials 2010 Annual Meeting, Apr 21-24, 2010.

12] Chair of Tissue Engineering Special Interest Group (Elected position), Society for Biomaterials, 2009-2011.

13] Organizer and Chair of "Developing Best Practices in Tissue Engineering Education" session, Society for Biomaterials 2009 Annual Meeting, San Antonio TX, Apr 22-25, 2009.

14] Moderator of "Academic Job Search Tips" panel, Midwest Biomedical Engineering Conference, Ann Arbor MI, Apr 3, 2009.

15] Chair of biomaterials and tissue engineering session, Regenerative Medicine: Advancing Next Generation Therapies, Hilton Head SC, Mar 5-8, 2009.

16] Co-Chair (with Mark Mercola, Burnham Institute) of "Vascular Tissue Engineering" session, Tissue Engineering and Regenerative Medicine International (TERMIS) 2008 Annual Conference, San Diego CA, Dec 7-10, 2008.

17] Organizer and Co-Chair (with Min Wang, U. Hong Kong) of "Composite Scaffolds for Tissue Engineering" session, 2008 World Biomaterials Congress, Amsterdam NL, May 28-Jun 1, 2008.

18] Co-Chair (with Laurence Bordenave, Bordeaux) of "Vascular Applications of Biomaterials" session, 2008 World Biomaterials Congress, Amsterdam NL, May 28-Jun 1, 2008.

19] Elected Vice-Chair of Tissue Engineering Special Interest Group (SIG), Society for Biomaterials, elected for 2007-2008.

20] Participant at NYSTAR booth at BIO2007, Boston MA (invited guest as a recipient of the JD Watson Investigator Award).

21] Organizer and Chair of "Bioreactors" session, Annual Fall Meeting of the Biomedical Engineering Society, Los Angeles CA, Sep 26-29, 2007.

22] Co-Organizer and Co-Chair (with Stephanie Bryant, U. Colorado) of "Developing Best Practices in Tissue Engineering Education" session, Society for Biomaterials 2007 Annual Meeting, Chicago IL, Apr 18-21, 2007.

23] Co-Chair (with Rudy Gleason, Georgia Tech) of "Engineered Cardiovascular Tissues" session, Engineering Tissues 2007 (ET-2007) Conference, Hilton Head SC, Mar. 7-11, 2007.

24] Nominations Committee, Biomedical Engineering Society (BMES), 2006-2007.

25] Chair of Session on "Commercializing Engineered Tissues and Organs", MEDi2005, Hartford, CT, Oct 25-26, 2005.

26] Co-Chair (with Elliot Chaikof, Emory U.) of "New Materials for Tissue Engineering" session, Engineering Tissues 2005 (ET-2005) Conference, Hilton Head SC, Mar. 9-13, 2005.

27] Chair of Biomechanics session, 30th Annual Northeast Bioengineering Conference, Springfield MA, Apr. 17-18, 2004.

28] (b) (4) (part of (b) (4), Atlanta GA), 2001-2002.

29] American Society for Testing and Materials
Active member of Committee F04 on Tissue Engineered Medical Products (1998-2003)
Chair of Taskgroup F04.46.02 on Microencapsulation Systems (1998-2000)
Vice-Chair of Subcommittee F04.46 on Delivery Systems (1998-present)
Chair of Subcommittee F04.43 on Cells and Tissue Engineered Constructs (2002-03)

30] BMES/EMBS '99 Joint Meeting Local Organizing Committee, 1998-99.

**Journal article reviews** (>70 reviews done in the past 5 years)**:**

Acta Biomaterialia, Annals of Biomedical Engineering, Bioconjugate Chemistry, Biofabrication, Biotechnology and Bioengineering, Biotechnology Progress, Biomaterials, Biomacromolecules, BMC Research Notes, Carbon, Cells Tissues Organs, Carbohydrate Polymers, Encyclopedia of Biomedical Engineering, IEEE Transactions on Nanobioscience, Interface, Journal of the Royal Society, Journal of Biomaterials Science, Polymer Edition, Journal of Biomedicine and Biotechnology, Journal of Biomechanical Engineering, Journal of Biomechanics, Journal of Biomedical Materials Research Part A, Journal of Biomedical Materials Research Part B, Journal of Composite Materials, Journal of Controlled Release, Journal of Histotechnology, Journal of Materials Science, Journal of Medical Devices, Journal of Microencapsulation, Journal of Microscopy, Journal of Molecular and Cellular Cardiology, Journal of Neural Engineering, Journal of Visual Experimentation, Langmuir, Macromolecular Bioscience, Nanotechnology, Stem Cells, The Lancet, Tissue Engineering Part A, Tissue Engineering Part B

**Grant reviews:**

1] American Heart Association (AHA)
2] Arizona Biomedical Research Commission
3] Center for Organogenesis (U. of Michigan)
4] Israel Science Foundation
5] James and Esther King Biomedical Research Program (Florida)
6] Kansas City Area Life Sciences Institute
7] National Institutes of Health (NIH)
    Biomaterials and Biointerfaces (BMBI) Study Section
    Bioengineering, Technology, and Surgical Sciences (BTSS) Study Section
    Enabling Technologies for Tissue Engineering Study Section
    Musculoskeletal Tissue Engineering (MTE) Study Section
    Tissue Engineering and Regenerative Medicine Study Section
    Training and Career Development Study Section
8] National Science Foundation (NSF)
    SBIR/STTR program
    Bioengineering and Environmental Science Division
    Division of Materials Research – Biomaterials
    Nano/Bio Mechanics Panel
    Division of Chemical, Bioengineering, Environmental, Transport Systems
9] National Aeronautics and Space Administration (NASA)
    EPSCoR Research Grant Program
10] Natural Sciences and Engineering Research Council of Canada (NSERC)
11] Netherlands Organisation for Scientific Research (NWO)
12] Singapore Biomedical Research Council (A*STAR)
13] Veteran's Administration (VA)
    Rehabilitation Research and Development program

**Professional Memberships:**

1] Biomedical Engineering Society (BMES) 1999-present.

2] Society for Biomaterials (SFB), 2000-present.

3] American Chemical Society (ACS), 1996-present.

4] American Heart Association (AHA), 2007-2008.

5] American Society for Testing and Materials (ASTM), 1998-2002.

6] American Association for the Advancement of Science (AAAS), 1997-2010.

**Professional Development:**

1] Workshop on "Improving the Accuracy of Faculty and Graduate Student Candidate Interviews", (b) (6), (b) (4) , Feb 8, 2013.

2] Coulter College (Commercialization Workshop), Atlanta GA, Oct 23-24, 2012.

3] NSF I-Corps Program (Market Research Program), Atlanta and Ann Arbor, Jul – Aug, 2012.

4] CRTL Workshop on "Using Case Studies across the Disciplines", Oct 3, 2011.

**Other**

**1]** Faculty Adviser for Biomedical Engineering Society student group at UM, 2012 – 2013.

**2]** Mentor in Microfluidics in Biomedical Sciences Training Program (MBSTP), 2009 – present.

**3]** Mentor in of Tissue Engineering at Michigan (TEAM) Training Program, 2009 - present.

**4]** Mentor in Cellular Biotechnology Training Program (CBTP), 2008 – present.

**5]** Member of Cardiovascular Center (CVC) Basic Sciences Research Team, 2008 – present.

**Community and Public Service:**

(b) (6)